ABSTRACT

A new geometry ion trap and its use as a mass spectrometer is described. The ion traps can be combined linearly and in parallel to form systems for mass storage, analysis, fragmentation, separation, etc. of ions. The ion trap has a simple rectilinear geometry with a high trapping capacity. It can be operated to provide mass analysis in the mass-selective instability mode as well as the mass-selective stability mode. Arrays of multiple ion traps allow combinations of multiple gas-phase processes to be applied to the trapped ions to achieve high sensitivity, high selectivity and/or higher throughput in the analysis of ions.